STONE PORCH, GREAT CHATFIELD CHURCH; WILTS.

STONE PORCH AT GREAT CHATFIELD CHURCH, WILTS.

Several of the churches in Wiltshire, possess porches of a singularly picturesque character, quite unlike those which are to be found in other parts of England. These porches are of very late date, mostly of the periods of Henry VII. and VIII.. In the first volume published by the Wiltshire Topographical Society the one at Grittleton church is given.

The porch at Great Chatfield church is about the time of Henry VII.; the church, dedicated to All Saints, is a small but beautiful structure. It has been fully described and illustrated by Mr. T. L. Walker, who devotes no less than eight plates to it, in his little volume on "The Manor House and Church at Great Chatfield." To this work I recommend any of your readers to refer who may require the details of construction.

C. J. R.

THE CONIC SECTIONS

CONSIDERED IN REFERENCE TO THEIR PRACTICAL APPLICATIONS.

The *conic sections* being of considerable utility in the various departments of the *constructive arts*, it is a matter of the utmost importance to practical men that they should be familiar with the fundamental properties of these curves, and the methods by which they are generated or described; it is therefore proposed to give a brief exposition of the different sections, and to illustrate the method of applying them to various useful practical purposes.

Conic sections are usually defined to be "the figures formed by the mutual intersection of a cone and a plane," and according to the different positions which the cutting plane assumes, there are formed five figures or sections essentially distinct from one another; namely, a *triangle*, a *circle*, a *parabola*, an *ellipsis*, and a *hyperbola*; but, because the triangle and the circle are ranked amongst the figures of elementary geometry, they are excluded from the conic system, and the remaining three only are strictly considered as *conic sections*. The manner of their formation by cutting the cone is as follows:—

When the cone is cut by a plane parallel to one of its sides, or when the cutting plane and the side of the cone make equal angles with its base, the section is a *parabola*.

When the cutting plane passes obliquely through both sides of the cone, or when it meets the base produced in a less angle than the side of the cone does, the section is an *ellipsis*.

When the cutting plane makes a greater angle with the base than the side of the cone makes, the section is a *hyperbola*; and if all the sides of the cone be produced beyond the vertex, constituting an equal and an opposite cone, the intersecting plane being also continued to cut this cone, the section is an *opposite hyperbola*, and this, together with the former, are denominated *opposite sections*, or *opposite hyperbolas*.

These, therefore, are the curves that constitute the conic system, and since they are distinct in their nature, and furnish their own distinguishing characteristics, it will be convenient, in the first place, to contemplate them